

The Use of ChatGPT in Higher Education: The Advantages and Disadvantages

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Abstract

Higher education scholars are fascinated by an artificial intelligence (AI) technology, ChatGPT, developed by OpenAI. Debate exists among the experts on whether or not ChatGPT can support learning. This literature review paper sits within the broader scope of measuring ChatGPT within higher education as a means to understand and produce higher-order learning. The purpose of this paper is to examine essential literature with the goal of providing a balanced contribution around the merits and limitations of the use of ChatGPT in higher education contexts. However, it is also important to examine the potential outcomes, both positive and negative. For this rapid review, the researcher searched Google Scholar, Scopus, and others between January 2023 and July 2023 for prior studies from other publications, and these studies were reviewed. This study found that using ChatGPT in higher education is helpful for many reasons. For example, it provides individualized instruction, spontaneous feedback, access to learning opportunities, and student engagement. There may be some benefits to the learning ecosystem and enjoyment for academics and students. The negative aspects of ChatGPT exist, too. The negatives include the inability to decipher emotion, lack of social interaction, technological limitations, and the risk of becoming overly reliant on ChatGPT in higher education. Higher education should blend ChatGPT with other delivery methods to provide a holistic learning experience to students and lecturers. It is a serious consideration to consider the positives, negatives, and ethical issues when applying ChatGPT in the classroom.

A. Introduction

The artificial intelligence (AI) revolution, which is bringing about significant change, includes chatbots. In many facets of life, including education, chatbots are rising in popularity. Higher education institutions (HEIs) are starting to utilize chatbots that can comprehend student concerns, offer assistance, and deliver answers [1]. Chatbots will enhance support services, academic counselling, and student participation through the power of natural language processing (NLP). However, how much NLP can aid higher education is yet unknown. Higher education has recently increased its use of technology. These include sophisticated language models like ChatGPT. ChatGPT method has provided scholars with fresh approaches to teaching students one-on-one and increasing their involvement in their education. The GPT-3 was used by OpenAI to construct the ChatGPT large language model.

The ChatGPT AI language model created by OpenAI deals with teaching and learning in higher education [2-4]. It can make text that sounds like a person and can reply well to many different things. People are increasingly interested in and talking about using ChatGPT in HEIs. However, some academics are worried about the issues with ChatGPT. Some believe that it doesn't understand feelings very well, doesn't have real human contact, and may cause scholars and students to depend too heavily on technology.

Nonetheless, it is important to consider the advantages and disadvantages of using ChatGPT in HEIs and how it can be effectively used in education. This article explains how ChatGPT might impact higher education now and in the future, mentioning both positive and negative effects. This research also highlights how it can assist scholars and students in acquiring knowledge on new topics, what might occur as a consequence, and provides suggestions and ideas for future studies on this subject. In conclusion, the researcher explains how ChatGPT can be used in HEIs to make learning better for people who use it.

B. Background

Automated assistance called chatbots is getting more and more popular because they can give customers quick and helpful support. HEIs have also started using this technology to improve the learning and teaching experiences for their students and scholars. Chatbots can help with things like finding information about courses, organizing schedules, and giving overall advice. They can use natural language processing (NLP) to provide customized learning experiences that are based on what students like and what they need [5, 6]. Chatbots through ChatGPT and other similar applications (tools) are always available to help with lots of questions. This makes them a good and easy option for students who need help even when lecturers (educators) are not available or the office is closed.

ChatGPT is a smart computer program that can chat with people across disciplines, including students and lecturers. It uses advanced technology to understand and respond to questions and conversations. Created by OpenAI and using the GPT-3.5 system, it can give short or detailed answers to a variety of questions and requests [7, 8]. For HEIs, ChatGPT is a useful tool that can understand and respond to difficult questions, which makes it a great option for higher education. However, it's necessary to think about the possible

disadvantages of ChatGPT along with its advantages before using it in HEIs' support services. Although ChatGPT is helpful, it should be used with other teaching methods to give students a complete education.

C. History of ChatGPT

ChatGPT is a computer program that can interact with a person. It runs on OpenAI, which is a group that does research. The company started in 2015 with Sam Altman, Greg Brockman, Elon Musk, and some other people. The Transformer model, created by OpenAI in 2017, is a kind of computer program that uses a neural network. It is the basic starting point for ChatGPT. Compared to older models, the Transformer was specifically designed to better understand and analyze sequential information, such as language [9].

Launched on November 30, 2022 [10], ChatGPT quickly gained over one million subscribers as people took to social media to spread the word about its potential [11]. Generative Pre-trained Transformer, or GPT, was initially introduced by OpenAI in 2018. GPT was developed to generate original text in response to a given prompt. It is programmed and trained on a large corpus of text. GPT, however, is unable to generate graphics or images. The development of subsequent versions of the model, culminating in the launch of GPT-3 in June 2020, was driven by the model's ability to generate coherent, substantial, and realistic text. With over 175 billion parameters, GPT-3, among the latest versions of ChatGPT, is currently the most robust and powerful. Numerous applications, such as chatbots, natural language processing, and language translation, have utilized it. The capacity of GPT-3 to engineer a multitude of language tasks, including translation, summarization, question answering, and more, without requiring task-specific training data, is likely one of the main accomplishments of this tool [12].

Nevertheless, there are a number of considerations attached to the development of ChatGPT. Many researchers have expressed concerns about the potential misuse of language models similar to GPT-3. Additionally, researchers have expressed concerns about the spread of biased or misinformation, fake news, and many researchers expressed ethical issues related to a lack of transparency around the development of these models and concerning how they could reinforce some of the biases that already exist in linguistic data generally [13]. Having said this, Chat-GPT is a valuable resource in natural language processing despite some of these reservations.

It has the power to completely change how people interact with linguistic data and provide speedy answers to inquiries (questions). This rapid review article not only illustrates the huge potential power of AI through ChatGPT, as well as through emerging technologies like machine learning and deep learning, in our higher education context. And although these models continue to evolve, they also seem to be improving to be more effective in the teaching and learning process.

D. Research methods

To quickly evaluate the volume of literature on the use and effectiveness of ChatGPT in the context of higher education, the researcher combined focused keyword searches with a rigorous manual screening of significant academic articles. The first step will be to identify key terms such as "History of ChatGPT,"

"Background," "benefits and limitations," and "ChatGPT in Higher Education." Using a fast and efficient way to search and collect relevant research on using ChatGPT in higher education, the review can be undertaken much faster. In total, 15 relevant publications were identified; however, this required reviewing recent sources and searching for specific terms. This included journal, conference, and book articles that utilized various ways to gather data, and many more, including counting, measuring, and screening. The rapid review aimed to collate the main findings of the review. It looked at both the benefits and limitations of ChatGPT and gave suggestions on how it could improve in the future. The researcher used past studies to assemble knowledge and give a fuller review of what is currently known.

The rapid review contained studies published within 5 years, focusing on studies between January 2023 and July 2023, which may exclude sources that are relevant but published before this. Going with the rapid review method provided the researcher with the ability to choose and synthesize the main findings of the studies fairly quickly, providing an important review of the current research space regarding the uses and applications of ChatGPT in higher education institutions. Overall, the rapid review approach seemed to work well when a quick summation of research was required, especially when the topic or research domain is new to the field of study. Systematic reviews offer an exhaustive and considerable representation of the body of knowledge for specific fields of study. Rapid reviews are not able to be as exhaustive and systematic. Future research in this area should focus on resolving these issues and determining ways to use ChatGPT effectively within higher education.

E. The critics of the use of ChatGPT in higher education

While they have the potential to transform the student experience in higher education, there are numerous apprehensions when dealing with persisting as well as newer concerns with chatbots such as ChatGPT. The lack of emotional intelligence in chatbots is a major criticism, as it may lead to frustration and dissatisfaction [14]. Students likely will prefer talking to a live advisor (educator), who can help them more personally and authentically. Another criticism directed towards ChatGPT is its potential limitations in understanding complex questions, leading to misunderstandings. While chatbots such as ChatGPT are designed to search, organize, understand, and answer a variety of questions and inquiries, they may not be able to provide similar nuanced expertise as a live advisor [15].

Asking about details on unfamiliar organisations or famous individuals can be seen as a personal question or inquiry, for example. Taecharungroj [2] states that many users of the internet believe ChatGPT responses are inaccurate, biased, and perform poorly. ChatGPT has also received criticism from many sources based on the potential of producing harmful content and spreading misinformation. In addition, it could decrease critical thinking and cognition for humans as well as make them careless and less productive.

It is naturally upsetting some people that chatbots like ChatGPT could displace human advisers for jobs, leading to employment loss and a decline in support service quality [14, 16]. Chatbots may help lessen the burden on teachers and other staff; however, universities must remain diligent not to let them become the primary means of supporting students. Overall, using chatbots like ChatGPT in

university can make the student experience better. However, before opting to implement ChatGPT in their support of academic services, higher education institutions should carefully evaluate any potential issues and ChatGPT's potential limits.

F. Advantages of ChatGPT in higher education

According to empirical studies, using ChatGPT increases students' happiness and engagement in studying. According to research Kasneci, et al. [17], ChatGPT can encourage student engagement in their coursework and research by providing prompt responses and tailored guidance. According to research Javaid, et al. [18], ChatGPT can lessen the workload that faculty and staff members have to bear. This gives them more time to concentrate on other crucial responsibilities. However, there are many advantages to using ChatGPT in higher education:

- **Enhanced student engagement:** Students can benefit from ChatGPT by having quick access to knowledge and assistance anytime they require it. Students may use this feature to communicate with the chatbot anytime they want, which enables them to obtain the support and guidance they want. Additionally, ChatGPT may provide responses that are customized to the individual requirements and interests of every student. This keeps students interested in and involved in what they are studying. Students' learning is made more enjoyable with chatbots like ChatGPT. They support students in continuing to take an active role in their education. According to research by Dwivedi, et al. [19], these sophisticated ChatGPT's provide students with an engaging and dynamic approach to learning.
- **Cost-effective:** The benefit of ChatGPT is that it may address several inquiries (questions) at once, reducing the workload on staff. Organizations save time and money by doing this. With ChatGPT, you may quickly get assistance with admissions, course registration, obtaining financial aid, and academic counselling. This strategy enables staff members to devote more time to challenging jobs.
- **Instant feedback:** Students can immediately correct their errors. Ray [20] claims that ChatGPT can provide responses and feedback on student work rapidly. This aids in their learning and allows them to correct their errors.
- **Availability:** Students can use ChatGPT to get immediate answers to their questions whenever they need them. This helps them to quickly get the information they need. If students are better at making decisions, it will make their learning in school better.
- **Scalability:** ChatGPT can handle a lot of inquiries as the institution grows, making it very efficient. ChatGPT can help support services by learning to handle more types of questions as more students come.
- **Personalized learning:** ChatGPT can provide customized learning that meets the specific needs and interests of each student. They can also make recommendations for what lessons to take, give feedback, and prepare study materials. Being able to recognize what the student needs and offering them personalized assistance allows for a more tailored learning experience [5].

- **Multilingual support:** Schools with a wide variety of types of students could benefit from ChatGPT's ability to recognize and articulate various languages. ChatGPT recognizes and responds in many languages, which can aid international students in acquiring the information they need and getting help beyond the classroom.
- **Improved accessibility:** ChatGPT may improve accessibility for students with disabilities by offering help for students with visual impairments or hearing impairments to access and understand written content. ChatGPT may help improve education for students who are non-native English speakers or who have disabilities. Some suggest that using specialized technology to support students with disabilities or offer translation of languages in real-time could be beneficial [17].
- **Data collection:** ChatGPT may be able to compile data on students' interactions and interests. This data may be used for personalized learning experiences and an improved level of assistance. Additionally, this data may be used to identify specific areas where students may need additional assistance.

G. Disadvantages of ChatGPT in higher education

There have been many issues and problems with the use and incorporation of chatbots in higher education, such as ChatGPT. Critics of chatbots argue that they do not have the emotional intelligence required for human contact and communication, which can produce user dissatisfaction and frustration. Moreover, ChatGPT may not recognize complex questions, which can lead to misapplied messages. Disadvantages of ChatGPT in higher education can include:

- **No human connection:** Their responses display emotional intelligence. If students only use a chatbot as their singular source of connection, students may feel alienated from the institution and as a result, will have poorer satisfaction levels in the overall experience. Bozkurt, et al. [21] claim, a lack of face-to-face communication, as well as ChatGPT's limited personal engagement, might result in alienation and declining motivation for students.
- **Limited personal touch:** Because they are programmed to respond to a specific type of question, chatbots cannot offer individualized responses that require contextual understanding. Students who require more nuanced assistance may grow frustrated and may end up with dissatisfaction as a result.
- **Limited precision:** Students can become frustrated and confused due to the chatbot providing incorrect or insufficient information. This can lead to students' experiences suffering from misinformation in all aspects of their experience, such as course selection decisions, financial aid, and academic counselling.
- **Security issues:** Chatbots are susceptible to hacking and attacks online, thus putting students' private information and data confidentiality at risk. Institutions are ultimately responsible for the security of ChatGPT and student data privacy.

- **Restricted emotional comprehension:** When responding to student challenges (personal, social, economic, and political), the chatbot may not have the emotion, empathy, and understanding as it does not possess the emotional understanding of human involvement and connection. Students may become frustrated and disenfranchised if they feel their challenges are not adequately addressed. Students may experience an increase in frustration or a sense of disconnection as a result of the chatbot's (ChatGPT) emotional understanding deficiency and inability to effectively identify and react to students' emotional states [22, 23].
- **Technology:** Chatbots rely on imperfect natural language processing technology. They may struggle to properly understand complex questions or what to do with specific types of questions. This may lead to confusion and frustration for students.
- **Maintenance and support:** Chatbots require regular maintenance and support in order to function correctly. For institutions, this can be time-consuming and expensive, especially if they lack specialized IT employees to operate the chatbot.
- **Risk of bias:** Chatbots may be designed with prejudice or stereotypes that might be harmful to particular student groups. The programming of ChatGPT should prioritize inclusivity and take into account the diverse student populations, as stated by educational institutions.
- **Over-reliance on technology:** Overuse of ChatGPT and other technologies can have detrimental effects on critical thinking abilities and problem-solving inventiveness [23, 24].

If higher education institutions want to use ChatGPT in their support for teaching and learning, they must carefully weigh these benefits and drawbacks.

H. The Contributions, Implications, and Recommendations of the study

Students' ability to approach a problem, learn, and engage with educational information has the potential to be disrupted and revolutionized by the usage and use of ChatGPT in higher education. Nonetheless, it does provide some restrictions and challenges that must be considered. The following are opportunities, implications, and recommendations that have been made regarding the topic.

a. The study contributions

By providing personalized and immediate feedback, increasing accessibility and responsiveness, and improving student engagement, the use and integration of ChatGPT has the potential to disrupt and transform student perceptions of educational content challenges and, subsequently, how they learn. It can provide students with a more involved and personalized learning experience while having a positive impact on academic achievement and learning satisfaction overall.

ChatGPT has the potential to enhance the overall teaching experience by alleviating the responsibilities of educators, thereby enabling them to spend less time on certain aspects of education while spending more time on student participation and collaboration. The use and implementation of ChatGPT can provide lecturers with the opportunity to spend less time on teaching and learning, administrative tasks, student community, and various intellectual engagements.

b. Implications of the study

ChatGPT has had a major effect on higher education in that it has the ability to change how students interact with and utilize instructional resources. However, it is equally important to note that there are certain limitations or dangers that could occur, such as a lack of emotional intelligence, affective engagement, over-reliance on technology or systems, and many more. ChatGPT has the potential to lead to an environment where staff, including supervisors and lecturers, are more likely to think and analyse irrationally. As such, all stakeholders, including higher education administrators, educators (lecturers), and students, must consider the consequences of adopting ChatGPT at a higher education institution and, following appropriate consideration, be prepared for its responsible use. Another finding is that educators (lecturers) need the proper training and guidance in order to effectively apply ChatGPT in the educational context.

c. Recommendations

- **Supplement with other teaching methods:** Lecturers should ensure ChatGPT is not a replacement for other forms of teaching methods, such as student discussion in groups or peer-to-peer activities that provide a more holistic learning experience.
- **Quality of training data:** The quality, standard, and accuracy of the training data should be deliberately selected, assessed, and updated to ensure that ChatGPT is accurate, objective, and produces meaningful results.
- **Professional development for educators:** So that they can appropriately integrate ChatGPT into their teaching practices while helping students work around the limitations and challenges of technology, educators are also required to participate in professional development. Therefore, educators need to be trained appropriately to build the necessary skills and knowledge.
- **Ongoing assessment:** An ongoing study of the use and impact of ChatGPT in postsecondary education to evaluate its effectiveness and identify aspects for further development.

ChatGPT has the potential to support postsecondary education by improving the teaching and learning experience through new opportunities for individualized instruction and immediate feedback. There are, however, some limitations and challenges that need to be carefully considered and addressed. Post-secondary education institutions have the potential to strategically incorporate this technology into their education process and support student achievement through the implementation of a balanced approach that incorporates the benefits, challenges, and recommendations for ChatGPT in post-secondary education.

I. Future studies

Future studies on the use and application of ChatGPT in post-secondary education need to examine a wide range of items. One possibility is to look at ChatGPT's effectiveness in specific course areas, such as science, technology, engineering, and mathematics (STEM), where individualized education and

immediate feedback are critical. This would also include comparing the academic performance of students who do and do not use ChatGPT.

One effective future direction is to evaluate how ChatGPT can facilitate collaborative learning. ChatGPT is a valuable tool for facilitating online conversation and group projects because it provides real-time comments and suggestions to improve the quality of conversation and collaboration. Future studies can explore the impacts of ChatGPT on group engagement and the quality of collaborative outcomes. Future studies could examine ChatGPT's potential to assist and guide students in managing their mental health. Students can use ChatGPT as a confidential and safe space to express their concerns freely and possibly receive some emotional support. ChatGPT could be an important resource for children who do not have access to traditional counselling support.

Future studies should investigate the limitations of ChatGPT, in particular, the lack of emotional intelligence and interpersonal interactions. Future studies should also explore how to improve the personal learning experience through the integration of ChatGPT with other pedagogies, such as group discussions and peer feedback activities. Future studies on ChatGPT in higher education can provide valuable insight into how to leverage this technology to improve learning outcomes and address challenges that higher education is currently facing.

J. Conclusion

Chatbots like ChatGPT may change the higher education sector by providing educators with ongoing student access to information and services. While challenges for adopting ChatGPT do exist, the fundamental benefits, including increased student engagement, cost efficiency, accessibility, and scalable, greatly outweigh the potential risks. Ideally, educational institutions need to ensure safety, reliability, and alignment with student needs when considering chatbots to support students in the classroom. If AI and chatbots are used creatively, institutions can enhance students' experiences while also offering a more relevant and engaging academic environment. This approach aims to provide pupils with the knowledge and abilities they'll need to be successful in their future activities.

K. References

- [1] O. Nalyvaiko and A. Maliutina, "Use of chat bots in the educational process of a higher education institution," *Scientific notes of the pedagogical department*, no. 48, pp. 117–122, 2021.
- [2] V. Taecharungroj, "'What can ChatGPT do?' Analyzing early reactions to the innovative AI chatbot on Twitter," *Big Data and Cognitive Computing*, vol. 7, no. 1, p. 35, 2023.
- [3] T. Rasul *et al.*, "The role of ChatGPT in higher education: Benefits, challenges, and future research directions," *Journal of Applied Learning and Teaching*, vol. 6, no. 1, pp. 41–56, 2023.
- [4] J. G. Meyer *et al.*, "ChatGPT and large language models in academia: opportunities and challenges," *BioData mining*, vol. 16, no. 1, p. 20, 2023.
- [5] K. Fuchs, "Exploring the opportunities and challenges of NLP models in higher education: is Chat GPT a blessing or a curse?," in *Frontiers in education*, 2023, vol. 8: Frontiers Media SA, p. 1166682.

- [6] P. Caratozzolo, J. Rodriguez-Ruiz, and A. Alvarez-Delgado, "Natural language processing for learning assessment in STEM," in *2022 IEEE Global Engineering Education Conference (EDUCON)*, 2022: IEEE, pp. 1549–1554.
- [7] Z. Chaoning *et al.*, "One small step for generative ai, one giant leap for agi: A complete survey on chatgpt in aigc era," 2022.
- [8] J. Willems, "ChatGPT at universities–the least of our concerns," *Available at SSRN 4334162*, 2023.
- [9] A. Vaswani *et al.*, "Attention is all you need," *Advances in neural information processing systems*, vol. 30, 2017.
- [10] X. Zhai, "ChatGPT user experience: Implications for education," *Available at SSRN 4312418*, 2022.
- [11] L. Hays, O. Jurkowski, and S. K. Sims, "ChatGPT in K-12 education," *TechTrends*, vol. 68, no. 2, pp. 281–294, 2024.
- [12] T. Brown *et al.*, "Language models are few-shot learners," *Advances in neural information processing systems*, vol. 33, pp. 1877–1901, 2020.
- [13] D. Yan, M. Fauss, J. Hao, and W. Cui, "Detection of AI-generated essays in writing assessments," *Psychological Test and Assessment Modeling*, vol. 65, no. 1, pp. 125–144, 2023.
- [14] A. Prioleau, "Examining the Effectiveness of Chatbots for Transfer Students in Higher Education," University of Pittsburgh, 2020.
- [15] C. Zielinski *et al.*, "Chatbots, ChatGPT, and scholarly manuscripts-WAME recommendations on ChatGPT and chatbots in relation to scholarly publications," *Afro-Egyptian Journal of Infectious and Endemic Diseases*, vol. 13, no. 1, pp. 75–79, 2023.
- [16] B. Amundsen and S. Johansen, "Having a Chatbot as a Colleague (Master's thesis, University of Agder)," 2022.
- [17] E. Kasneci *et al.*, "ChatGPT for good? On opportunities and challenges of large language models for education," *Learning and individual differences*, vol. 103, p. 102274, 2023.
- [18] M. Javaid, A. Haleem, R. P. Singh, S. Khan, and I. H. Khan, "Unlocking the opportunities through ChatGPT Tool towards ameliorating the education system," *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, vol. 3, no. 2, p. 100115, 2023.
- [19] Y. K. Dwivedi *et al.*, "Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy," *International journal of information management*, vol. 71, p. 102642, 2023.
- [20] P. P. Ray, "ChatGPT: A comprehensive review on background, applications, key challenges, bias, ethics, limitations and future scope," *Internet of Things and Cyber-Physical Systems*, vol. 3, pp. 121–154, 2023.
- [21] A. Bozkurt *et al.*, "Speculative futures on ChatGPT and generative artificial intelligence (AI): A collective reflection from the educational landscape," *Asian Journal of Distance Education*, vol. 18, no. 1, pp. 53–130, 2023.
- [22] M. Sallam, N. A. Salim, M. Barakat, and A. a. B. Al-Tammemi, "ChatGPT applications in medical, dental, pharmacy, and public health education: A descriptive study highlighting the advantages and limitations," *Narra j*, vol. 3, no. 1, p. e103, 2023.

- [23] N. V. Tatsenko and I. Donik, "Make teaching English easier with ChatGPT," Sumy State University, 2023.
- [24] V. Božić and I. Poola, "Chat GPT and education," *Preprint*, vol. 10, 2023.